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Stimulating Indigenous Agribusiness Development in the Northern Communal Areas of Namibia:

A Concept Paper



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Technical Paper No. 73
August 1997



***Productive Sector Growth and Environment Division
Office of Sustainable Development
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Foreword

Indigenous Southern African Farmers and emergent businesses are ill prepared to participate in the imminent economic revolution in this region. In spite of massive donor technical and financial outlays, indigenous agricultural business operators remain foreigners to their own national and regional agribusiness markets.

One of the strategic objectives of Initiative for Southern Africa (ISA) is to increase indigenous business development and ownership. A key thrust of the ISA will be promoting the development and increased participation of the indigenous private sector in all areas of the regional economy, with a particular focus on stimulating growth and increased productivity among small and medium sized enterprises. USAID believes that it is critically important to respond to the growing need across the region for jobs, and to assure that people traditionally excluded as economic operators in the region secure a stake in and share the benefits of economic growth.

Under the ISA initiative, USAID has established a regional enterprise development program to provide loans, grants, equity investments, technical assistance and training to encourage the creation and expansion of commercially and developmentally vi-

able enterprises. The program will also identify and promote the adoption of specific market-oriented macro-economic policies needed to stimulate and facilitate the development of the indigenous private sector.

Through the use of commodity sub-sector approach, this concept paper proposes (a) market-driven farm and off-farm entrepreneurial options that could lead to the creation of indigenous oriented economic growth, and (b) empowerment of micro, small and medium scale private enterprises and create enabling environment conducive for equitable growth of indigenous agribusiness in Namibia.

This report is one of a series of studies on indigenousization of the economies in the Southern African sub-region, being conducted by the International Programs Office of the University of Maryland Eastern Shore, and through the private sector.

David A. Atwood, Chief
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business development in the Southern African sub-region, any comments and suggestions on this concept paper would be appreciated. Correspondences can be sent to Emmanuel Acquah, Office of International Programs, University of Maryland Eastern Shore, Princess Anne, Maryland 21853; Telephone (410) 651-6192; Fax (410) 651-6292; and e-mail eacquah@umes-bird.umd.edu.

Glossary of Acronyms and Abbreviations

CLUSA	Cooperative League of the United States of America
FAO	Food and Agriculture Organization of the United Nations
GDP	gross domestic product
GRN	Government of the Republic of Namibia
ISA	Initiative for Southern Africa
MAWRD	Ministry of Agriculture, Water, and Rural Development
NAP	National Agricultural Policy
NCA	Northern Communal Area
NDC	Namibian Development Corporation
NDP	National Development Plan
NGOs	nongovernmental organization
PSD	Private Sector Development
PVO	private voluntary organization
RSA	Republic of South Africa
SADF	South African Defense Force
SAEDF	South African Enterprise Development Fund
USAID	United States Agency for International Development
WOCCU	World Council of Credit Unions

Introduction

On March 21st, 1990, Namibia became independent from South Africa, thus ending 75 years of control. The popularly elected government has been faithful to the democratic principles of its manifesto and has continued the policies of pragmatism and national reconciliation initiated after coming to power. The governments clearly stated objectives have recently been incorporated in the First National Development Plan (NDP). These are: to promote economic growth, increase employment, reduce income inequality, and alleviate poverty. In addition, the government has recently drawn up its National Agricultural Policy (NAP).

During the period of dominance by the apartheid system, the communal areas of Namibia to which the bulk of the indigenous population was confined were seriously disadvantaged. The people living in these areas bore the brunt of the effects of the liberation war as well as being socially, politically, and economically marginalized by the iniquitous apartheid system.

It is necessary to understand that the forty years of these areas being treated as “homelands,” of what was, in effect, South Africa’s fifth state, has left a legacy of neglect even more serious than that which applies to equivalent areas in the new South Africa. Development and the provision of basic services and infrastructure were concentrated almost entirely upon the white dominated towns and commercial farming areas. Opportunities for employment for the indigenous people were confined to lower ranking civil service jobs, and the amenities necessary for entrepreneurial development were non-existent. The manufacture of finished products and the provision of services were left to the South African commercial and industrial sector with the result that no experienced labor pool of any significance — either employed or self-employed — was built up in Namibia.

Namibia is thus faced, not only with a shortage of skills and expertise but also with the basic experience necessary to build upon and develop. A commend-

able start has been made on formal education and training, and the country is fortunate that a significant number of Namibians received secondary training and tertiary education whilst in exile. In addition, various international governments and agencies are rendering valuable assistance. However, Namibia’s greatest need is, and will be for some time, the capacity building of its peoples and institutions. The most previously disadvantaged were women, whose position now requires to be seriously addressed.

Unemployment is running high. With a population estimated at 1.6 million, of which 68% is in the rural areas, only 23,000 new job opportunities have been created in the formal economy in the last 4 years. The labor force available in 1991 was estimated at 479,000 with an annual net increase of some 14,000. In 1995, over 300 people per week entered the job market unsuccessfully. The population of 1.6 million is projected to grow at a rate of between 3.1% and 3.3% to 1.9 million by the year 2000 and to 3.5 million by 2020. There is a rapid rise in urban drift as male members of households leave the rural areas in vain search of employment in the towns. This has led to a 5% growth rate in the urban sector. If this trend continues, close to 1 million people may be living in urban areas by 2006.

There are many constraints facing Northern Communal Area (NCA) farmers. Some of these are historical in origin relating to past neglect and marginalization under the apartheid system. The denial of the means to advance over many years has induced a unique blend of sociological lethargy and remarkable human coping mechanisms in the population of these areas. In addition, the farmer is also confronted with a harsh uncompromising natural environment, vast distances, incipient drought, and progressive natural degradation.

Namibia’s average economic growth in the period 1991 to 1994 was 4.4%. The gross domestic

product (GDP) per capita at US \$1,600 is one of the highest in sub-Saharan Africa. However, Namibia has the second highest level of income inequality in the world (after South Africa) and poverty is widespread. Subsistence farming forms the larger of the two major concentrations of poverty (the other being the unemployed urban poor). It provides the largest source of employment in the country, though market wages are about US \$1.5 per day (Namibia Economic Policy Research Unit 1995).

Land tenure continues to be an issue. In the past, indigenous communities were dispossessed of land in favor of colonizers and confined to areas considered unsuitable for economic development. This created the dualistic land tenure structure whereby the former “tribal lands” or “reserves” are communally owned and individual title is not possible as it is in the commercial, former white, areas. Without title, the lack of collateral to offer against borrowing denies communal farmers access to credit.

Namibia has limited arable areas available, soils of low inherent fertility, a fragile ecosystem, and erratic rainfall. Despite these limitations, the Government of the Republic of Namibia (GRN) aims, with justification, to “increase and sustain the levels of agricultural activity, real farm incomes, and national and household food security, within the context of Namibia’s fragile ecosystem.” There is a definite and deserving need for assistance in strengthening socioeconomic development in the country’s northern ru-

ral areas. Opportunities exist for redressing the legacy of the past, by creating mechanisms for the indigenization of both new and existing economic activities. Some of the areas with potential for indigenization are:

- Processing of Pearl Millet;
- Horticultural Production and Marketing; and
- Provision of Inputs and Input Services.

This concept paper proposes (a) market driven farm and off-farm entrepreneurial options, that could take advantage of the existing opportunities, thus leading to the creation of indigenous oriented economic growth and (b) empowerment of the small and medium scale private enterprises to create an enabling environment conducive for equitable growth of their businesses. This calls for direct interplay between donor assistance and the private sector (farmers, processors, traders) through intensive use of non-governmental organizations (NGOs) and Cooperatives to enhance domestic capacity of businesses to address problems which they face. In working towards effective and equitable economic growth, it is necessary to increase black ownership and investment at all levels of the economy. Given the major role of the agriculture sector in the NCAs, it is suggested that black empowerment in the agribusiness sector may be a logical start for the indigenization of the economy.

The Model

The proposed model for the indigenization of the agribusiness sector of Northern Namibia is presented in Figure 1. This is a stepwise model which is demand driven and places great importance on organization planning, problem identification and solution prior to production. The model is designed to be generic and highlights stages involved in planning for any on-farm or off-farm business undertaking.

After establishing a goal, the first step in the model is a market situation analysis which starts with the demand for the given commodity or service and works backwards to the production point. This exercise is critical since effective demand is the key determinant of production levels, types of produce, distribution of products, and profit margins. The analysis ends with identification of intervention opportunities. Investment decisions, size of operation, and type of business all depend on this assessment.

The second step in the model is to analyze pre-production issues including problem identification and solution processes. Common issues for almost any enterprise may include technical, financial/credit, policy, infrastructure, socioculture, facilitation services (training, research, extension), and availability of critical inputs. Such an analysis enables the indigenous entrepreneurs to determine feasible/optimum participation in a given industry. It helps identify measures and resources needed for sustainable business operation. Each set of issues (constraints or interventions) may vary according to enterprise and the resources of the entrepreneur. Unlike other business development strategies, where the issues in the pre-production stage are addressed by facilitating services after the decision has been made to produce, the decision to produce in this case is made only after pre-production constraints have been identified, analyzed, and proposed solutions are formulated. Since issues in the pre-production stage cut across disciplines, a team approach is required to adequately

identify, prioritize, and analyze the problems and develop pragmatic solutions for them.

The third step of the model involves the operational activities at the production level, including actual investment and production. This includes implementation of a business plan for the opportunities identified in the pre-production stage. The production stage follows the logic of the pre-production stage with attention to details on, among others, cultural practices, cost analysis, quality control, finance/credit, policy, infrastructure, socioculture, training, research and extension services. The functional approach to management (planning, organizing, directing, monitoring, and evaluating) plays an important role in achieving performance levels in line with pre-production expectations.

The final step of the model involves post-harvest and marketing issues. Here, the technical issues center around post-harvest, quality control, processing, packaging, distribution, transportation, and market information and communication. Agribusiness activities (transformation of a commodity into different forms, as needed by consumers, the delivery of the products to the right place and at the right time) that add value to the commodities, are the major concerns of the analyses.

Traditionally, the interventions which are proposed to address the constraints in the pre-production, production, and marketing sections are handled through host country governments via bi-lateral and/or multilateral projects. Unfortunately, the impact of such projects has been dismal in most of sub-Saharan Africa. Also, even in cases where such interventions have been successful, they have not been sustainable after project completion. This model deviates from the conventional approaches in that the capacity building development subsection of the intervention modes are intended to build domestic private sector capacity to solve problems on a sustainable basis.

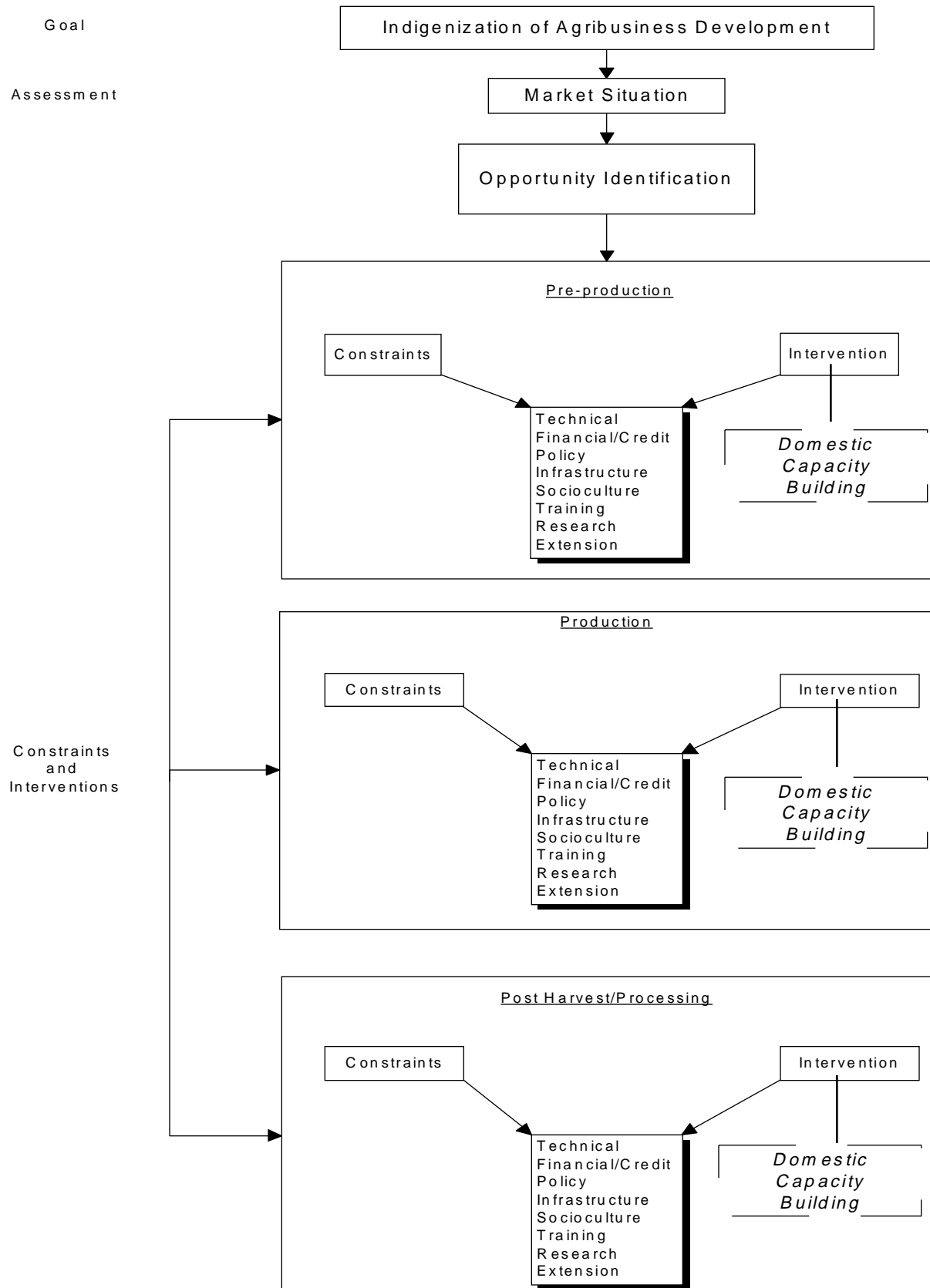
There is evidence that official development assistance to developing countries has been declining in real terms since the mid 1980's. Given this trend, it is necessary for developing countries to design strategies for fostering economic development with less aid and more sustainability. The capacity building development in the model emphasizes the empowerment of individuals, households, local communities, and small business associations to solve their own problems. The empowerment of these could be accomplished through:

- Support for formation and/or strengthening of associations to increase the voice of participants involved in or related to improving policies and policy enforcement.

- Mobilization and development of viable rural financial credit unions and saving associations capable of financing business.
- Technical assistance and training in farm management, work planning, etc. to develop and strengthen rural micro, small and medium enterprises which are labor-intensive and competitive.
- Development and enforcement of standards, weights, measures and regulatory instruments essential for effective functioning of markets.

International donors could assist in this arena by providing technical advice and some financial support to farmers and emergent businesses and associations through NGOs, private firms, and universities.

Figure 1. A Model Plan for Agribusiness Development



Application of the Model

Based on the assessment, field reconnaissance visit and review of the literature, the authors suggest the following as major potential enterprises in the agribusiness sector that could be explored to increase indigenous agricultural enterprise development in Namibia: (1) Processing of Millet; (2) Input Production/Services; and (3) Fruits and Vegetable Production and Marketing.

PROCESSING OF PEARL MILLET (PENNISETUM TYPBOIDEUM)

Background

Pearl millet, known as Mahangu, is the traditionally preferred crop in Namibia and is the main staple food of the majority of the indigenous people. Even after periods of shortage, when imported maize is used, millet consumers will return to their staple diet as soon as it becomes available again. It is the only grain crop that will consistently produce yield even in difficult conditions due to its superior drought resistant properties. The crop is thought to have its origins in Africa and for generations has been the main source of food for people living in the semi-arid, drought prone regions. Despite millet being Namibia's major crop, no formal marketing system is in place. Production has been confined to the Northern Communal Areas and is produced mainly by subsistence farmers who trade surplus within their household for food requirements.

The absence of marketing structures in the NCA's can be considered as one of the legacies of colonial neglect. As a result of this neglect, no data base exists to provide information regarding production, consumption, and marketing. The only available information in this regard is from the Namibian Early Warning and Food Information unit which gives cereal production estimates based on assessment missions. At present it appears that this is the only infor-

mation source available upon which to base any form of strategic planning.

These assessments are used by the Namibian Agronomic Board to estimate what imports of cereals will be necessary in any one year to make up the deficit. At present approximately half of the country's staple cereal requirement is provided by Namibian farmers. The remainder is imported in the form of maize and wheat, for which more reliable yield estimates are available. Millet is not imported for a variety of reasons including non-availability and perceived processing and distribution difficulties.

The marketing of millet is presently confined to the non-formal sector and only to those farmers who consider that they have a disposable surplus. However, considerable trading does take place and millet is usually on offer from stall-holders at various open air markets. Millet is also bartered directly between surplus and deficit households. In addition, informal importation from neighboring Angola occurs. The GRN is in the process of setting up a Millet Marketing Intelligence Unit to assist in the development of market outlets for farmers who produce millet surplus to their domestic requirements. This initiative will form another component in the overall thrust towards enhancing the millet production environment.

The reasons behind the GRN's concentration on millet development can be summarized as follows:

- Millet is the only cereal that is productive in Namibia's semi-arid and drought prone conditions.
- It is the preferred staple food of the majority of people either living in, or from, the NCA's.
- A significant production increase is achievable.
- Increased production will lead to the raising of subsistence farmer living standards and contribution towards national food security.

Most NCA farmers are women (64%) as the men frequently feel compelled to move to the urban areas in search of a cash income. Labor availability is thus affected. Health problems exist and are generally poverty related. Malnutrition and alcohol abuse are common.

The GRN is receiving donor funded assistance in a number of areas ranging from feasibility work through to project establishment as well as a number of short-term specialized technical assistance programs where local counterparting is practiced. Whilst these initiatives are essential ingredients in development in previously neglected areas, there are, nevertheless, difficulties inherent in the process. These are related mainly to coordination of effort and the need to ensure that the injection of varying levels and types of expertise are applied in such a way that the whole process is positive and sustainable.

Market Assessment and Opportunities

The Market Situation

The processing of millet is poised to become a market in itself and is expected to further enhance actual production. A recent study, plus a successful millet processing pilot scheme by the Namibian Development Corporation (NDC), have led to the conclusion that the introduction of mechanical agro-processing, appropriate to village level use, is now eminently feasible. Despite the northern areas as a whole being in deficit, “millet is traded within regions and it is within this trade that the service miller and small commercial miller can find a niche” (Dendy 1995). The millet processing pilot scheme referred to above has conclusively demonstrated that the commercial processing of millet, its packaging and distribution are viable propositions. In addition, it has been confirmed that demand exists for the final product on supermarket shelves. The entire process of millet handling as presently, and traditionally, practiced in Namibia is both extremely arduous and time consuming. This task falls upon the woman of the household and it has been calculated that this process takes her an average of 20 hours per week.

A further potential market exists in the equipment distribution sector. Suitable equipment devel-

oped locally and regionally, specifically for millet processing, is now available. Millet processing is an intricate and labor intensive process and only recently has the necessary technology been perfected for this to be undertaken mechanically. The de-hulling of the grain necessary to remove the pigmented and indigestible hulls is an essential part of the process, without which milling cannot take place. The development of an efficient de-huller has thus opened the door to the provision of a complete range of mechanical equipment necessary for the whole process. The marketing and service back-up would cover a range of equipment which includes: threshing, winnowing/grading, de-hulling, and milling.

Opportunity Identification

A number of commercially viable opportunities appear to exist for the emergent entrepreneur in millet processing. As mentioned earlier, the technology for this is now at the stage where the industry can enter the establishment phase. The size of the equipment is such that single units will suit the small entrepreneur and are relatively affordable. Larger operations would utilize the same equipment in multiple units. In addition to the technology development, recent in-depth studies have concluded that the system developed is economically viable (Dendy 1995).

Opportunities for the Small Entrepreneur

The opportunities in millet processing for the smaller operators include: threshing, dehulling, and milling. These operations can be carried out in the growing localities and have an important social role in that they relieve the women — who form 64% of farmers anyway — from the time consuming drudgery into more productive activities one of which, during the growing season, would go towards increased crop yields. It has been calculated that “a service mill with dehuller plus hammer-mill will make a 20% return to the owner with a charge for the dual process of only 50 cents/kg (14 US cents)” (Dendy 1995). This operation is quick and efficient and the customer would wait for less than 10 minutes to have a 20 litre (18 kilograms) container both de-hulled and milled. As a comparison, the traditional hand preparation method using mortar and pestle has been shown in recent tests

to require one woman-hour to produce 725 grams of edible meal (Dendy 1995). Thus a 20 litre/18 kg container sufficient for 1 week's food for the average household would require in excess of 20 hours work to hand process. The charge by the miller would be around N \$9.00 (US \$2.50) for 18 kgs. Relieving the housewife of this work would amount to a cost-effective 12.5 cents (3.5 US cents) per hour.

Opportunities for Medium to Larger Scale Operations

Services based at growth points or in towns would include: dehulling, milling, packaging, distribution, wholesale trade, and retail trade. This array of services could be handled, in one way or another, by the emergent entrepreneur. The miller can accept grain as payment for the service and this could form the basis of trading with the commodity. The emergent businesses could also participate in the distributive trade which would involve equipment importation, or assembly, or manufacture, or a combination as the case may be. Repair and maintenance services and provision of spares parts could also be an essential component of the distribution trade.

Pre-Production Constraints

Technical Issues

When discussing the technology transfer of the mechanical processing of millet, it is important to mention that this technology has only very recently been developed to the point where it can reasonably be disseminated. The processing of millet is complicated by the necessity of removing the outer skin, or hull, of the grain before milling can take place and it is this dehulling component of the process that has only recently been perfected. Entrepreneurs in the rural areas are not only unaware that this technology exists but also lack the knowledge to utilize it. It is therefore necessary to provide training in the use of the processing machinery to the indigenous entrepreneurs. This training would cover the necessary skills for the operation of the machinery as well as the repair and maintenance aspect. Another constraint concerns the availability of spare parts and fuel and/or electrical power for running the equipment.

Credit Issues

Lack of access to credit for the rural indigenous entrepreneurs and communal farmer must be acknowledged as a major constraint. Up until now, credit institutions, both public and private, have been unwilling to provide financial assistance to borrowers who have neither collateral nor a record of credit worthiness. This has placed the small operator in the communal areas in a no-win situation. Credit is required to purchase and install the machinery and for the running costs to cover fuel, labor, repairs, maintenance, and transport.

Policy Issues

Government has recently formulated plans for the dissemination of this technology, recognizing that it falls within the scope of indigenous entrepreneurs. Appropriate programs have yet to be introduced. These programs are intended to cover the training of entrepreneurs in both the technical and administrative aspects of millet processing.

Infrastructural Issues

The urban and commercial farming and mining areas in Namibia are reasonably well serviced with public amenities. This is not the case in the rural areas where only the main centers are equipped, or supplied with the usual utilities such as roads, telecommunications, water, and health and education facilities.

Due to the absence of surface water, settlement is concentrated along water courses; the main canal and pipeline reticulation system in the northwest and the Kavango river in the north and Kwando and Zambezi river systems in the Caprivi area in the northeast. Distances are great, communications are difficult, and transport costs are consequently high. Only the main centers are served with electrical power. There are no regular bus services and travelers rely on minibuses which do not run on any particular schedule. Air service has tended to be erratic, expensive, and infrequent. Therefore, the dissemination of technology will have to be designed to overcome these constraints. Operators will require assistance in establishing mechanisms that will enable them to overcome these constraints.

Sociocultural Issues

Women who live and work on the mainly subsistence type farms in the communal areas are particularly disadvantaged. In addition to acting as head of the family in the all too common situation where the male head of family is absent for almost all of the year working in the commercial areas, she has to run the farm and provide for the family. This entails the onerous and time consuming labor of processing the Mahangu grain by pounding with mortar and pestle for a total of around 20 hours per week. This not only denies women farmers any quality of life but also uses time and energy that could otherwise be spent on more meaningful and productive work in improving crop yields. The absence of a large proportion of the male members of rural families whilst seeking or holding down jobs elsewhere creates a shortage of labor which also has a negative effect on crop yields. The introduction of processing technology for village level use would therefore be highly appropriate.

Training, Research, and Extension Issues

It will be some time before the effects of these inter-related issues will make a noticeable difference in the lives of the intended beneficiaries. Qualified, but inexperienced, extension workers are only now entering the field. Some vocational and skills training by various NGOs has been — and is being — undertaken, but is limited in scope. No training exists that would provide an entrepreneur interested in small scale mechanical millet processing with the rudimentary knowledge, both technical and accounting, to run such an enterprise.

Production Constraints

Considering that the processing of Mahangu is a new technology which has yet to be put to general use, even by the large commercial organization, the assumption can be made that the pre-production constraints discussed earlier will also apply to production. It is anticipated that the main constraint that will face the processing operator will be the lack of basic technical and administrative skills to run his or her business. No facility exists at present to foster such an initiative. Those operating away from the main cen-

ters will experience varying difficulties with transport. This will apply to both the delivery of the processed product — when there is a marketable surplus from any given area — and to the procurement of input items such as fuel and spare parts.

Marketing Constraints

The constraints facing the smaller, rurally based operator will be those related to service milling of the customer's own grain for home use on the one hand and the processing, packaging, and marketing of any local surplus on the other. The milled grain may either be bought by the processor or accepted as payment in kind for service milling. In these situations the constraints could be securing payment in cash or kind, or for credit extended to poorer households for service milling. The marketing of any surplus will be constrained by access to packaging materials, the delivery of the product to the market, and the securing of payment. No formal marketing channels or organizations to supply marketing service exist at present.

Proposed Interventions

Recent government initiatives have laid useful and meaningful groundwork that will greatly assist in the indigenization of Mahangu (millet) processing. It has recently coordinated donor funded specialist input which has brought the technology to the point of practical application. NDC hosted this initiative at one of its northern projects where it has been running a pilot scheme on Mahangu processing for the last three years. Thus, the technology is now available for dissemination and suitable equipment has been sourced, tested, and adapted where necessary.

The GRN has plans for setting up a Mahangu Processing Training Center at this site where mechanical technology training will be offered to individual entrepreneurs, or their staff or cooperatives. NDC will be offered a two year contract to start the process. A further training unit, at a different venue, will be set-up to offer courses in production economics, business plan preparation, and financial management pertinent to the technical training. This will probably be done by a local NGO (Canamco).

Upon the successful completion of the courses the candidate will be recommended for credit from the Agricultural Bank of Namibia. This credit will go towards capital expenditure on equipment and initial running costs of a Mahangu processing enterprise. The Ministry of Agriculture, Water, and Rural Development (MAWRD) has authorized N\$1.1 million to be spent on the project during the 1995/96 fiscal year. In addition to the technical assistance budget for the trainers, the limited appropriation will have to also be used to cover (a) transport reimbursement of trainees from all over the country, (b) the Loan Grantee fund to the Agricultural Bank, and (c) establishment of a spare parts shop, so that the commonly required parts will be available in Namibia at short notice. It is expected that there will be far too many applicants interested in the course than the current personnel and training sites can handle.

Recommendations

USAID through ISA project, PSD, or others such as WOCCU and CLUSA could participate in domestic capacity building through (a) Loan/Credit to support the loan Grantee Fund for the project, (b) support the cost of technical training in mechanics/technology of the various machinery so as to increase the training staff from one to two or three (this will result in more people having access to the training), (c) provide direct technical assistance in participating in the production economics, business plans and financial management training, and/or (d) assist in the transfers of the running of the spare parts from NDC to private business.

LAND TILLAGE SERVICE

The Market Situation

The hectareage that small farmers in the communal areas are able to plant is largely governed by what hand or animal drawn land preparation can be completed after the on-set of the first rains and the optimal planting period. This is usually a short space of time and is one of the major constraints in terms of overall production. Very few farmers own, or have access to, mechanized equipment in the communal areas. With

Namibia's climate, the start of the rainy season is virtually impossible to predict. Often farmers are unable to prepare an optimum area of land in this short span of time.

The GRN started and now runs a land preparation service for small farmers in the communal areas. This service is provided at a subsidized rate in favor of the farmer whether government or private equipment is used. The service is coordinated by government extension workers. Problems have arisen prompting government to commission a detailed study on the feasibility of commercialization of these services (Namibia Economic Policy Research Unity 1995). It is expected that the recommendations — broadly in favor of commercialization — will be acted upon shortly.

The negative impacts of the original initiative have included: (a) unfair competition to would-be suppliers including drought animal ploughing services, (b) the inordinate amount of time and effort spent by extension staff from the Ministry of Agriculture, whose task it has been to handle these services and, (c) only some 3,500 farms (2.2%) out of 159,000 small farmers are benefiting from this service.

Opportunity Identification

Opportunities therefore exist for local entrepreneurs, acting either individually or associatively, to provide such services when these services cease to be supplied by the government. It is intended that the funds currently used for the service will be utilized in a voucher scheme whereby subsistence farmers who qualify will receive vouchers with which to pay for specified goods or services. It is expected that opportunities will emerge in respect of input services in ploughing, planting, cultivating, harvesting, and haymaking/fodder production. In addition, services such as mobile workshops for the repair and maintenance of farmers' own equipment would be a possibility. As far as input items are concerned this would involve the provision of a range of products that would either be imported or manufactured locally.

Pre-production Constraints

The would-be indigenous operator contemplating entering the land preparation business faces certain difficulties. The procurement of equipment in these re-

mote areas is affected by general non-availability of tractors and implements. Sales are limited to new, and therefore expensive, equipment and service back-up is poor. Credit to purchase equipment is also not readily available and there is no institutional framework in place to assist in overcoming the problems outlined above as well as to help the entrepreneurs prepare a business plan and give advice on the choice of equipment size and type. No technical assistance is available to assist in the identification of equipment suitable to the conditions, to ensure that the tillage methods employed are ecologically benign.

Production Constraints

The scope of work is limited to what area can be covered — either by mechanical or animal draught power — when the system used at present is applied. Since the period of preparation is confined to a few weeks at the on-set of the rainy season. Equipment designed so that preparation could be carried out over a six month period prior to the first rainfall is not currently available. Such equipment would provide much better economies of scale in equipment usage spread. In Namibia's climate, the onset of the main rainy season is virtually impossible to predict and the present system does not allow for a situation of preparedness.

There is a shortage of trained tractor drivers as well as mechanics for essential repairs and maintenance work. Assistance and guidance for business management is not available. The use of animal draught power is practiced either on-farm or by an operator who will contract out to neighbors. This traditional method — which is environmentally sound in Namibia's conditions — cannot, however, be started until some time after the first rains when grazing is available to enable the animals to be in condition to have sufficient strength for field work.

Marketing Constraints

The market in the land preparation service would be limited to affordability by the farmer who needs no convincing as to the benefits of the system. Government will be transferring the present direct subsidy element to the new voucher system whereby the subsistence farmer can render payment for various input

costs. The voucher is then redeemable from the government by the supplier.

Interventions

The privatization of the land tillage services provides a window of opportunity for emergent black entrepreneurs or farmer cooperatives to venture into the input sector of agribusiness in the NCAs. However, for them to compete successfully, there is need for capacity building to enhance skills (business planning, marketing, and management). Access to reasonably priced credit will be needed for equipment acquisition. To create rural engineering capacity in the NCAs, the government, in partnership with some donors, should provide funds to provide such training and capacity building (i.e., welding, blacksmithing etc.). The project should be executed by NGOs/PVO. Africare has been active in Namibia and has the experience in such programs in other parts of Africa, and could be very effective in implementing such an activity.

It is recommended that USAID through PSD or ISA in collaboration with the GRN provide support for Africare and its U.S. partners to develop and implement such an activity for about four to five years. The training under such activity should be opened to individuals, farmer cooperatives, or group of indigenous businesses. While a few cooperatives have been formed in the NCAs, they are generally regarded as merely serving the interests of the organizers, rather than the members.

CROP AND LIVESTOCK INPUT PROVISION

The Market Situation

In an effort to ensure that crop and livestock input requirements are available to communal farmers, the GRN has been providing a service in this respect. Distribution has been undertaken by extension workers who arrange for the delivery of seed, fertilizer, crop chemicals, and veterinary preparations at subsidized prices.

As with land preparation, this service is proving costly to government while benefiting only a small proportion of the disadvantaged smallholders in the communal areas. Yields are negatively affected by the non-application of fertilizers which is due mainly to unavailability and non-affordability of fertilizers to most farmers. This practice leads to a steady decline in soil fertility accompanied by a commensurate yield drop. Farmers are then obliged to attempt cultivation of larger areas in order to obtain a given yield of grain for their own subsistence. This, in turn, is increasing the incidence of desertification. The use of fertilizer by the small farmer is thus not common and this market would have to be developed.

Opportunity Identification

With the phasing out by the government of its input supply service to communal farmers, opportunities for indigenous entrepreneurs will occur. These supplies would include seed, fertilizer, agro-chemicals, veterinary preparations, farm machinery and implements, tools and equipment, cattle licks etc. The handling of these items would provide entrepreneurial opportunities for importation, local packaging, local manufacture or assembly, wholesaling and retailing. In time, the provision of advisory and follow-up services would follow.

Pre-production Constraints

With regard to the farm input supply situation, Namibia has been, and is still, a captive market of South Africa. This situation has its origins in a mixture of convenience and vested interests, not necessarily benefiting the country in terms of product suitability or price, or both. For example, fertilizers imported from South Africa are suited to that country's soils and conditions and not Namibia's. Transport distances from manufacturing points in South Africa to northern Namibia are great. Fertilizer imported from Zimbabwe would arguably be cheaper, have lower transport costs, and be better chemically compounded for local conditions. Supply is thus limited to Windhoek (via South Africa) trading interests. The local entrepreneur wishing to stock these items would therefore face difficulties in procurement.

Production Constraints

Local stockists would face problems with warehousing, transport, distribution, and cash flow. In addition, it would be difficult dealing with fluctuations in demand which would occur from time to time caused by, say, the need to replant crops because of drought or livestock inoculation during disease outbreaks.

Marketing Constraints

A serious difficulty that would face the local suppliers would be credit extension to customers, even taking into consideration the government voucher scheme that will be introduced to replace the subsidized input supply service. Customer access is likely to be difficult considering their remote location in many cases. The local supplier will have to ensure that his prices are such that his customers are able to farm profitably and thus sustain his enterprise. At present various anomalies exist in regards to tariffs and sales duties on agricultural inputs which have the effect of inflating prices to the farmer.

Proposed Interventions

It is thought that an institutional approach to capacity building is the most appropriate one in these circumstances. It is recommended that assistance be provided — both technical and financial — to facilitate the establishment and efficient running of farmers cooperatives or business associations. This is seen as a necessary first step. For historical reasons (i.e., cooperatives or associations of blacks were not allowed under the Apartheid System) communities are likely to need some time to recognize the need to act associatively and it is thought that the process of community mobilization for members and capacity building for management could proceed concurrently with the establishment and running of the cooperative facilities (farmers, businesses) with technical assistance.

The assistance would be provided by experienced personnel who would initially oversee the whole process while their local counterparts would be studying them. In the final stages of the technical assistance program, the local counterparts would take full responsibility with the technical personnel acting merely as advisors before their tours of duty end. This will

again provide opportunity for new partnership (among GRN, donors, and NGOs) to create sustainable off-farm employment for the people of the NCAs. This is a technology transfer and commercialization activity in which PSD could effectively participate.

HORTICULTURAL PRODUCTION AND MARKETING

Background

It is generally agreed within the private and public sectors of Namibia that a large proportion of the country's demand for horticultural produce could be satisfied by domestic production. Although Namibia has the potential for producing a substantial proportion of its horticultural needs, the bulk of the supply of its fresh fruit and vegetables still comes from the Republic of South Africa (RSA). Opportunity exists for the export of some commodities at certain times of the year in addition to those relatively few high value exports presently being made.

According to Hopley and Evans, the bulk of the demand for fresh fruit and vegetables in Namibia has traditionally been satisfied by imports from RSA, where abundant supply of a wide range of fresh fruits and vegetables at reasonable prices is available almost all year round (Evans 1992; Hopley 1992). Hopley contends that South African farmers have for many years enjoyed an unfair advantage over Namibian producers because of ready access to technology and inexpensive credit. According to Evans, imports of fresh fruits and vegetables were also stimulated by the ready availability of a substantial number of large trailer and refrigerated vehicles used to export cattle and fresh meat to RSA which sought return loads. Consequently, the cost of transportation was and is still relatively low. This arrangement which satisfied the consumer demand also provided a convenient outlet for "dumping" the excess of RSA's produce into Namibia; and neither the importers nor the previous government made any major attempt to encourage or develop irrigated horticultural production in Namibia. On the question of the "dumping" of fruit and vegetables by South Africa on the Namibian

market, this generally held perception needs qualification and the following points should be borne in mind: (a) the imported produce is generally of good quality, (b) it is imported on a willing seller/willing buyer basis and satisfies local demand, and (c) Namibia is not able, for climatological reasons, to produce the full range of horticultural requirements of consumers at all times.

The above condition is believed to have led to a highly concentrated market structure for fresh fruits and vegetables, which is dominated by six Windhoek based wholesalers who import their requirements on a regular basis from Cape Town and/or Johannesburg. This practice has resulted in a stagnation of the development of the horticultural industry in Namibia. The GRN has recently decided to encourage the expansion of horticultural production as one of its strategies to diversify the agricultural sector and boost household food security and improved nutritional status of its people. As part of a strategy to improve the socio-economic welfare of the majority of its population, the GRN is anxious to develop the production and marketing of domestic horticultural products in the NCAs of the country.

Horticulture has been identified as a potential sub-sector in which indigenous Namibians can become more meaningfully engaged to increase their level of income, employment, and standard of living. There is a wide range of fruits and vegetables that could be produced and processed (value added) in the Northern regions of Omusati, Oshana, Ohangwena, Oshikoto (the former Owamboland), Okavango, and Caprivi.

To provide an opportunity for the growth and development of the domestic horticultural industry, the current market situation needs to be restructured to reduce its concentration and facilitate more competitive. The attainment of sustainable domestic horticultural production in the Northern Provinces will contribute to, among other things: (a) increase domestic production of fresh fruits and vegetables, (b) foreign exchange savings, (c) creation of job opportunities for numerous Namibians to help address the problem of unemployment, and (d) prevention of net migration from rural to urban areas.

Market Assessment and Opportunities

The Market Situation

The domestic demand for horticulture in Namibia is strong but this demand is being satisfied by supply from RSA and, to a limited extent, the central commercial region of Namibia. The few (6) wholesalers virtually control the country's horticultural market and the demands in the Northern Regions are satisfied with little production from the regions. The market in the north is essentially closed to local retailers who are either subsidiaries of the Windhoek based wholesalers or controlled by the wholesalers outside the region. This arrangement serves as a barrier to entry for local producers in the north regions. The potential for cross-border as well as international markets is good, particularly with the prospect of lasting peace in Angola, and the development of the economies of the neighboring states of Botswana and Zambia. Informal cross-border trade already exists among close clans or tribes which has great future potential. There are also potential international markets for Namibian horticultural produce include RSA (during their off seasons), the Middle East, and the European Union countries. There is a potential for tomato paste to support proposed fish canning industry on the west coast. There is also demand for other items like paprika and chili products.

Another major constraint is a self imposed one by Namibian producers. This is the inherent inability and unwillingness to act associatively in the best interests of their industry. No viable or disciplined cooperative approach has been made towards orderly marketing. Retailers in Namibia understandably demand quality and continuity of year round supply which producers will only be able to meet if they act associatively.

Given the importance and potential role that the horticultural industry could play in the economy of Namibia, it is ironic that there are still no reliable statistics in any government office on horticultural produce. Statistics for the industry had to be obtained from the wholesalers. The team was very fortunate to be cordially received by the Hopley Group of Companies which assisted us to obtain estimates of de-

mand for fruits and vegetables in Namibia. The Hopley Group of Companies are the major wholesalers of fruits and vegetables in Namibia and they supply about 50% of the domestic market demand. The other 50% is supplied by City Produce, Martings and firms in Walvis Bay, Oshakati, and Otjiwarongo.¹

Our estimates for the demand for fruits and vegetable based on the projecting of Hopley's data is about 450 tons per week, of which 78% are vegetables. In a good year this estimate could increase by 15% to 520 tons per week. In 1992, Evans estimated that 500-750 tons of fruits and vegetables are imported from RSA into Namibia weekly, with the bulk of it, 70%, being vegetables (Evans 1992).

Sales by wholesalers to the major outlets, the supermarket chains, are often made on a "sale or return" basis with the wholesaler taking responsibility for stocking and maintaining the shelves. In some instances this is extended to the wholesaler having a "shop" under its own name within the store.

Retail margins are reported to be about 15% on the wholesale price. With supplies originating in RSA and similar operating costs among the wholesalers, there appears to be little price competition among the major outlets. The general level of quality of the produce offered for sale in the retail outlets, particularly of the more perishable produce, is relatively low while prices are often high. There is a marked falling off in the quality of the more perishable produce by Wednesday, prior to the arrival of fresh imports. Prices, however, tend not to reflect this deterioration. As all the wholesalers follow a similar importing pattern, the consumer has little choice but to accept the quality on offer.

Smaller retailers, dominated by the Portuguese community, purchase their requirements directly from wholesalers and hawkers. The range and quality of the produce offered varies from outlet to outlet depending upon the location of the shop and customer profile. As these retailers purchase their requirements, rather than buy on "sale or return," they tend to buy

¹ Personal Communication with Mr. J. C. Hopley, Director of Hopley's in Windhoek

selectively small quantities several times per week from more than one wholesaler.

In the townships of the communal areas, market ladies and street sellers, in addition to the larger chains and individual retail shops, offer a limited range of fresh produce for sale. This range is normally restricted to cabbage, onions, tomatoes, pumpkin, and, when the price

competes with maize meal, potatoes. Supplies are purchased directly or indirectly from wholesalers, hawkers, or in a few instances from local producers. The quality is generally poor and items are either individually priced or sold by number. There is little or no price competition between sellers, even to reflect quality differences.

Domestic production accounts for only about 3% of the fruit and vegetable demand in the formal sector. The rest of the demand (97%) is satisfied by importation from RSA. However, there is evidence to suggest that Namibia has the potential to satisfy a far greater proportion of its requirements for fruit and vegetables and even some for export. The northern regions, where most of the indigenous population lives, has an outstanding potential, if the right stimulus and enabling conditions are developed, to contribute substantially to meet the domestic demand for horticultural products.

Opportunities

The Northern Regions of Omusati, Oshana, Ohangwena, Oshikoto, Okavango, and Caprivi have physical and natural resources which are necessary and conducive for horticultural production. In the Kavango and Caprivi regions, the potential is high because there are rivers which flow perennially in the regions. In the Omusati province there is the Olushanji Dam which can be a source of water for vegetable production. There is also the water canal which stretches from Angola to Oshana covering a distance of 200 km. The water canal could serve as a source of water for communities along the 200 km stretch. Three regions (Erundani, Erundani, and Katima) have access to water for irrigation from Kunene, Okavango, and Zambezi rivers, respectively. The perennial Okavango river serves as the major source

of water for the northern part of Kavango regions. The Okavango river is capable of providing year round water for irrigation schemes for Northern Okavango. The average rainfall for the area normally ranges from 275 to 749 mm per year.

The soils along the Okavango, Zambezi, and Kunene rivers are sandy and loamy and suitable for horticultural production. The climatic conditions in the regions provide opportunities for the production of a wide variety of vegetables and tropical fruits which include: onions, cabbage, green maize, pumpkins, green beans, beets, carrots, tomatoes, butternut, squash, chilies, lettuce, peas, peppers, broccoli, cauliflower, potatoes, garlic, spices, rape, spinach, watermelons, sweet melons, lemon grass, paprika, rosemary, chilies, bananas, guavas, papayas, pineapples, citrus, and mangos. Most of these crops could be grown throughout the year provided there is availability of water.

In the Kavango region, a number of NGOs, support groups and private institutions (Catholic Mission at Sambyo, Salem, and Nkurunkuru gardening projects, the Council of Churches of Namibia and Oxfam - Canada) have successfully demonstrated that the region can produce a wide range of vegetables and fruits. For example, the Salem Gardening Project which covered an area of 34 hectare in Kaisosi with 34 farmers was able to produce 20 metric tons of vegetable per annum (Myburgh). Mr. Max Haimbiri, a private farmer, who got assistance from NDC has been producing vegetables on a 1.5 irrigation plot in Shadikongoro since 1991. He produces 300-400 kg of tomatoes per week throughout the year. According to Myburgh and Klein, Kavango has an enormous potential for vegetable production through small-farmer systems. Prior to independence, EHAFO owned Shankara and used the farm to produce vegetables for the South African Defense Force (SADF) (Myburgh). But with the withdrawal of the SADF from Namibia, the market for fresh produce also disappeared. EHAFO tried to obtain a contract to supply vegetables to the local schools and hospitals without success. Like EHAFO, various horticultural production projects failed not because of technical production problems, but because of marketing constraints. Vegetables pro-

duced in the northern regions of Namibia, will have the advantage of freshness over those imported from South Africa. According to Myburgh and Klein, "Fruits such as mangos, avocados, papaya, strawberries and citrus have unlimited potential for production under irrigation in Kavango" (Myburgh).

In the 27 July - 2 August, 1995 issue of *New Era*, there was a feature article entitled "Woman Registers Major Agricultural Success: Desert Becomes A Green Garden". The following quotation from that article summarizes the potential opportunities for horticultural production in the northern regions of Namibia.

When Emily Angala started her vegetable and fruit garden on an arid plot along the main road between Ongwediva and Oshakatiin, 1990, many passers by looked at her and laughed at her efforts. Today, those who laughed at her efforts five years ago, stare in amazement at what to them is a living miracle. Through hard work, innovation and imagination, she has turned a semi-arid plot into a lush green garden of 'Eden'. Today, Angala's miracle garden has about 1,000 trees of various types and vegetable plants — all healthy and providing a sharp contrast to the arid environment that surrounds them. It had long been believed that fruits like grapes and oranges could not grow in northern Namibia. But these are now to be found in Angala's garden and are growing well. According to Angala all development is man-made — including growing trees, vegetables and fruits in a 'desert'.

Distinct opportunities exist for indigenous farm and non-farm businesses. They include: farm production of horticultural products; processing of horticultural products; handling, storage and transportation (middleman operation) of horticultural products; supply of resources (inputs); and retail marketing of horticultural products. Whether these opportunities are viable will depend on their constraints and interventions analyses.

Constraints

Pre-production Constraints

The opportunities and potentials of using horticultural production and marketing to indigenize the agribusiness sector of the economy in the northern regions of Namibia are subject to several constraints. The major constraints identified in the pre-production stage for horticultural production and marketing enterprises include: (a) Policy,

(b) Infrastructure, (c) Financial, (d) Technical, (e) Research and Extension Issues.

(a) Policy Constraints

The legal and regulatory policies carried over from colonization that give favor to the commercial sector and non-Namibians are the major constraints to agribusiness development and trade. These policies serve to hamper effective competition and freedom of entry into the domestic market. They result in barriers to market entry and access to credit. Policies on maintaining agricultural subsidies serve to distort prices of farm inputs and outputs and discourage private sector investment and participation in agricultural development. Some progress by government to alleviate the policy constraints have already begun. The GRN's National Agricultural Policy drafted in June 1995 to address policy constraints will be beneficial to the communal area. The GRN aims to establish policy that will help increase and sustain levels of agricultural productivity, real farm income, and national and household food security. Its NAP emphasizes private sector and community cooperation and participation with full recognition and encouragement of local organizations as key actors in the development process. The GRN has a National Cooperative Policy which recognizes that cooperatives are an integral part of the private sector; that the cooperative movement must develop progressively without undue interference from the State; and that their organization and management must be client initiated and driven.

With little or no attention given to horticulture in either the commercial or communal areas, no institutional infrastructure has been developed to address the needs of the horticulture sector. No department within the Ministry of Agriculture, Water, and Rural Development has been given the responsibility for addressing the needs of the horticultural sector. As a result, policy initiatives for the development of the sector have to date been neglected. With the exception of the limited number of capital intensive projects being undertaken by NDC in the northern riverine areas for the development of irrigated crops, the progress made in developing fruit and vegetable production has stemmed mainly from the entrepreneurial initiatives of farmers and NGOs. The stage has now been reached where further progress towards increas-

ing the potential of the sector is being seriously constrained by the lack of a focal point in MAWRD for developing and administering the required institutional infrastructure and initiation of policy actions. Access and ownership of land are unevenly distributed in Namibia. Black Namibian farmers own only 169 of the commercial farms, representing only 2.9% of all farms. The average size of farms is 8,592 hectares in the commercial area, while the average farm size is very small in the communal areas. In Ovambo for example, the average area cultivated by a family is 1.7 hectares; in Kavango it is 2 hectares; and in Caprivi it is 2.5 hectares (Government of Namibia 1991, p. 8). Lack of ownership rights makes the acquisition of critical resources difficult and prohibits access to credit since unofficial land cannot be offered as collateral for loans. Investment and maintenance of the land and its environment is thus next to impossible. The existing land tenure policy discriminates against the black population and needs to be looked at.

The importation of some agricultural commodities, such as maize, wheat, edible oil, and beef, is subject to control by the government. Importation is permitted only after it has been determined that domestic production will not meet the quantity demanded. Fruits and vegetables should be subjected to such controls if it has to have a change to develop.

(b) Infrastructure Constraints

Infrastructure constraints in the communal areas include transportation and distribution, water facilities, and energy. However, water is the most critical. Given the ecological conditions of the country (semi-arid, frequent droughts, etc.) the availability of water becomes the primary constraint for agricultural development. Water is the necessary prerequisite for rainfed agriculture as well as irrigation agriculture. Horticultural products (i.e., fruits and vegetables) are highly dependent on a reliable and adequate supply of water. Even though there are major rivers in the Northern Communal Areas, major investments have to be made to bring water through irrigation to the small-scale farmers. This requires that irrigation systems to be developed be affordable, sustainable, and

cost efficient. Pragmatic irrigation strategies, therefore, need to be developed.

(c) Credit Constraints

Although water may be potentially available from nearby rivers in some parts of the NCAs, access to it for small indigenous producers is unattainable within their existing resources capabilities. Because communal farmers lack title deeds to property, they also lack collateral, which is a critical requirement for obtaining credit. Other constraints to credit include limited availability of rural financial institutions and other formal or informal arrangements, as well as a lack of information concerning credit and the use of it.

Access to credit is considered as one of the major constraints in all facets of agricultural production and agriculture related enterprise by small scale farmers and businesses. Given the fungibility nature of credit, accessibility to credit by the indigenous population is critical to any attempt to increase their effective participation in economic development and growth in the country. It is, therefore, imperative that feasible credit schemes within the context of the situation in the communal areas be developed as a pre-condition for the production and post-harvesting of horticultural crops in the NCAs.

(d) Technical Constraints

To date no system has been developed for the collection, analysis and dissemination of statistical information relating to the production, marketing and importation of fresh produce. This lack of an information base makes it particularly difficult for government to develop appropriate policy initiatives for developing the potential of the sector and to monitor the impact of those policies. Agribusiness firms are also at a disadvantage from not having access to information for assisting with investment decisions and planning their production and marketing strategies.

The Extension Service has an important role to play in the development of the production, and in the case of the communal areas, the marketing of fresh produce. However, the service presently lacks the technical expertise and experience necessary for providing the needed assistance. The Extension Service

was established before independence to provide advice and assistance to the livestock sector, primarily in the commercial area. As a result, it is staffed by officers with livestock or economics background and is not equipped to provide the production, post-harvest, and marketing advice required by growers of horticultural crops. This lack of expertise within MAWRD is a major constraint to the development of horticulture in both the commercial and communal areas. This is particularly relevant in the northern riverine areas where small-scale growers are less able to obtain advice from other sources.

The requirements of the communal and commercial areas for extension services differ significantly. Because of their lack of resources and the small-scale subsistence nature of their operations, growers in the communal areas will need intensive and sustained extension inputs if they are to improve their production practices and to develop opportunities to market their produce. Commercial growers with more resources at their disposal and operating on a larger scale are better equipped to respond on their own initiative once they have access to the information required to improve their production practices and marketing. Their need is therefore for periodic advice or information.

Production Constraints

The production constraints identified for the domestic production and marketing of fruits and vegetables in the NRCAs are mostly Technical, Credit, Extension, and Sociocultural in nature.

(a) Technical Constraints

Most farmers in the NCAs have limited experience in vegetable and fruit production. Most do not have the management skills and technology to produce in accordance with production and delivery schedules that would be required by wholesalers. The technical production constraints faced by the indigenous farmers in the NCRAs is well captured by a 1993 FAO report which stated that “conditions under which the crop are grown, the cultural practices used, the area planted, the timing of planting and the variety grown all have an impact on the quality of produce and hence its marketability.” (Evans 1992, p.

4) According to Evans some of the technical production constraints in the fruit and vegetable production of Namibia are production planning and cultivation practices (Evans 1992, p. A4).

Planning of production to meet a known demand for a range of produce at specific times of the year or to avoid gluts is rarely applied by growers and when it is, it remains at a rudimentary level. This applies to growers in both the commercial and communal areas. Factors exacerbating this situation include: a lack of awareness amongst growers of the susceptibility of fresh produce markets to gluts; the non-availability of market information; insufficient market research; a reluctance among growers to exchange information concerning their production intentions; and a tendency to plant too large an area with a single crop rather than stagger production and/or growing a wider range of produce. Little attention is given to selecting the most appropriate variety to meet market and consumer preferences.

Under the prevailing climatic conditions, horticultural crops are susceptible to a wide range of disease and insect attacks. Under these circumstances good cultivation practices are essential if crop yields and quality are to be optimized. With horticultural production being undertaken as a secondary activity many growers are inexperienced and unaware of the importance of timely action to prevent or control disease and attack or, when they are aware that action needs to be taken, they have difficulty in getting the necessary technical advice. There is a particular need for production and immediate post-harvest technical advice among the small-scale growers in the NCAs of Ovambo, Kavango, and Caprivi where knowledge of the correct cultivation practices and resources are limited. With horticultural production dependent on irrigation, proper water management is essential for optimizing the yield and quality of produce. While many of the better growers pay the necessary attention to water management, there are many less experienced growers whose produce is suffering from poor irrigation practices. There is evidence to suggest that other technical production constraints may also include high input costs and the unavailability of the

right seeds and pesticides (Evans 1992, p. 19). The limited access of the commercial farmers to credit compounds the farmers problem of acquiring the right seeds and pesticide even when they are available. In case of potatoes for example, the only source of seed potatoes is South Africa, and seeds from South Africa are expensive given the transportation cost.

(b) Credit Constraints

Access to formal credit for communal farmers and most of the indigenous settlers of the NCAs is very limited. Lack of access to credit is a problem compounded by unfavorable credit conditions (requires collateral, fixed, and moveable assets, title to land) that are impossible to be met by the communal residents. It is estimated that 75% of communal farmers would require seasonal, medium, or long-term credit (Masdar Zambia Ltd. 1993, p. 4). Lack of access to credit leads to shortage of capital in the communal areas for buying seeds, pesticides, fertilizers, irrigation equipment and facilities, and tools. A 1993 study on Northern Regions Development Program for the African Development Bank reported that the supply of credit is of critical importance in any development for the NCAs (Masdar Zambia Ltd. 1993, p. 8). An FAO report has suggested that providing access to credit to farmers in the NCAs for investment in inputs and for other investments is imperative if Namibia plans to encourage domestic production of fruits and vegetables (Evans 1992, p. 17). The report further recommends that other methods of providing credit for investment in pumps and irrigation equipment will be needed if the potential for fresh vegetable production along the Ruacana-Oshakati canal is to be exploited. Similar investments will be necessary to take advantage of water resources in the Okavango and Kaprivi regions.

(c) Extension Constraints

The staff of the extension services in the NCAs lack technical knowledge necessary for effective production and marketing of highly perishable crops like fruits and vegetables. Consequently, they are unequipped to train and provide technical production skills to the farmers. There is, therefore, a need for

technical assistance in training and advising extension staff in a wide range of areas in production and management of horticultural products.

(d) Sociocultural Constraints

According to Myburgh and Klein subsistence farmers, in accordance with their tradition, tend to produce only enough food for family consumption and perceive additional production beyond their family needs as surplus production, which is to be marketed by the government (Myburgh). This cultural belief influences their objectives in farming, with production for family subsistence being their main goal and not production for the market or profit. This also influences the types of crops and the level and quality of production. If the objective of production is for family subsistence, then they will produce mostly crops that are necessary for their food calendar. Most of the native Namibians in the NCAs, traditionally, do not consider fruits and vegetables as staples in their food calendar.

Marketing Constraints

In their study of marketing of fresh produce in the Kavango region of Namibia, Myburgh and Klein identified the following constraints, which were confirmed by our field visits (Myburgh pp. 13-40).

- The main constraints that the local farmers experience are marketing communication and production planning, with respect to the quantity and timing of supply of produce as required by the wholesalers and retailers.
- Supermarkets, wholesalers, and caterers need a reliable source of fruits and vegetables supply, but the local producers have not been able to fulfill this need. Reliability is a major concern.
- Independent caterers would prefer to buy vegetables from local producers, as long as they can guarantee consistency in supply, punctual deliveries and variety of good quality products. The variety of fruits and vegetables, produced by the local farmers are limited, even though there is a potential for the cultivation of several fruits and vegetables in the NCAs.

(a) Technical Constraints²

The bulk of the constraints in the marketing of fruits and vegetables are post-harvest and technical in nature and they include quality and consistency, packaging, post-harvest handling, and market awareness.

There is lack of appreciation among most growers of the importance purchasers place on quality and consistency of the produce offered for sale. If produce is to attract the highest prices, it must meet accepted quality standards and be of consistent size and appearance, i.e. produce has to be graded prior to being offered for sale. This has particular relevance in the Namibian context where the major alternative source of supply is RSA which can readily provide the required quality and consistency. Thus, unless domestic produce can compete effectively on quality and consistency Namibian growers will either have to accept lower prices or, in the extreme, find that their produce is unsalable. More attention must be given to establishing on farm grading as an integral part of the harvesting process.

Produce packaging serves two main purposes: to help protect the produce from damage during storage and transport and to provide a standardized quantity of produce to simplify transactions. Over time, different types and sizes of packages have evolved as standard for particular produce. Many Namibian growers have been slow or reluctant to adopt these standard packages. Offering produce for sale in what the trade considers to be non-standard quantities and packages puts the seller at a disadvantage with the resultant lowering of prices. The risk of damage to produce, e.g. through bruising, is also increased, again serving to lower its market value.

One of the factors which distinguishes horticulture from most other produce is its perishability. The rate at which produce loses its quality depends on the manner in which it is handled and stored from harvest to final sale. Under the high temperature and low humidity conditions experienced in Namibia, adoption of correct harvesting and post-harvest handling will have a significant impact on extending the shelf-

life and quality of produce, and thus the price that can be obtained. From observations of the methods used for on-farm handling of produce it is clear that growers are either unaware or unwilling to adopt the appropriate technology for maintaining produce quality. Examples include: timing of harvesting; the use of unsuitable field boxes; rough handling of produce in the field and during packaging; non-segregation of damaged produce; lack of cool storage or a cold chain for removing field heat and maintaining produce at its optimum temperature.

Farmers in Namibia have had little exposure to competitive markets and are therefore unaware of the needs and requirements of such markets and the mechanisms which are at play. This is evidenced by a lack of appreciation of the importance that quality, size, appearance, and packaging play in fixing the price of produce; lack of understanding of the volatility of prices to the balance of supply and demand; lack of understanding of the costs and risks incurred by traders and retailers in marketing fresh produce and consequently the apparently large difference between their selling price and the retail price.

(b) Policy/Infrastructural Constraints

The existing market structure is one of the most important factors hampering the development of horticultural production in the country. Under the present structure, growers are reluctant to increase their production as they are unsure of being able to market their produce; while wholesalers need to have a reliable source of supply for the range and qualities of produce they require at acceptable prices. The major problems include wholesale market and imports.

A marketplace structure in which NCAs growers can take produce for sale and wholesalers/traders can purchase the complete range of their requirements be the single most important factor inhibiting the marketing of fruit and vegetables in Namibia. Without such market structure, growers have to resort to hawking their produce from one wholesaler/retailer to another. They are, therefore, in a weak selling position which can be exploited by traders through offering lower than expected prices. This weakness in the present market structure leads growers to minimize

² This section is taken from Evans 1992, pp. A4-A13.

their risks by limiting the scale and range of their production and wholesalers to continue to import produce from RSA to meet their requirements. Open markets are available in many of the northern towns. However, small-scale growers in these areas experience difficulties in getting their produce to the market due to a lack of transport or lack of interest by petty traders. These open markets are often supplied by the “hawkers” with produce from RSA while local produce remains unsold in the fields.

The present market structure is highly concentrated and biased against domestic producers. To realize the country’s production potential of fruits and vegetable, especially through the involvement of the indigenous population, a major policy decision and commitment to restructure or open up the market is required. Such restructuring will cause conduct and performance of the system to improve and provide opportunities for local producers to effectively compete in the production and marketing of fresh fruits and vegetables.

Interventions

The intervention component of the model calls for: (1) the building of sustainable private sector, (2) development of indigenous capacities, and (3) empowering indigenous farmers and business people to collaborate with donor organizations, governments, and non-government organizations to develop solutions to pre-production, production, and marketing issues outlined in this paper. It will require a new form of partnership in which donors and the government play a lesser role in the development and management activities, and NGOs and the targeted group play a central role. Coordination of multiple donor resources (including government resources) is critical and leveraging of resources is a must.

The new collaboration may have the following characteristics:

- The government provides leadership in addressing policy, phytosanitary and significant infrastructural issues (i.e., land tenure, roads, telecommunication etc.);

- NGOs/Donors might contribute towards: (a) credit mobilization, (b) extension services, (c) market intelligence, (d) technology transfer;
- Local Private Sector participates in (a) production, (b) input supplies, (c) credit mobilization, (d) transport and (e) packaging.
- Some market issues could be jointly addressed by NGOs, GRN, Donors and the private sectors. These issues might include market research, packaging and establishing client driven cooperatives.

The following interventions are made for consideration by the GRN, USAID, and other donors interested in empowering indigenous Namibians to effectively participate in the economic development of Namibia, through fresh fruits and vegetable production and marketing.

Creation of Production and Marketing Cooperatives

The transformation of numerous micro non-market oriented small farmers into viable market oriented farmers in the NCAs could be achieved through development of workable cooperatives which are grass-roots driven. The production-marketing cooperative will be the mechanism through which sustainable domestic capacity building might be developed. A well organized, managed, and functioning production-marketing cooperative would provide opportunities for its membership to be treated as a viable business unit. Cooperatives can acquire enough political clout to influence policy-making processes and decisions to address policy issues that affect its membership. Cooperatives could also provide a means for solving the production and marketing constraints of its members. It is strongly recommended that the development and functioning of client driven cooperatives should be given a serious consideration.

Policy Interventions

The GRN appears very serious about providing opportunities for the indigenous population to effectively participate in the economic growth of the nation. In this regard several political decisions (Land Bill, Cooperative Bill, Agricultural Credit Bill for Small Farmers) are being taken to hopefully create an enabling environment. These are considered as nec-

essary conditions. The donor community is also supportive of effective rural transformation in Namibia. The history of NGOs and PVOs activities in the country testifies to their commitment to the improvement of the socioeconomic welfare of the bulk of the population. It may now be timely to form a new collaborative partnership among the government, NGOs/PVOs, donors and the farmers/businesses to coordinate resources and support decisions that would address the identified policy constraints.

The existing land tenure policy discriminates against the indigenous community and needs to be re-examined. It is hoped that the approval of the Land Bill, to be presented to Parliament in late 1995, will help address the right to ownership of land for the indigenous people of the Northern Provinces and improve their accessibility to formal credit.

To stimulate and promote research and development of horticultural production in Namibia, it may be necessary to develop policy initiatives that will encourage and protect an infant industry growth, without too much interference in the market as is currently done for maize, wheat, edible oil, and beef.

Technical Interventions

To develop efficient member drive cooperatives, technical assistance support from donors will be essential. The assistance to be provided should include:

Production

- Informal training in technical and farm management production skills.
- Development of farm management manuals to train extension staff and farmers.
- Funds for specific research on seed variety selection, water management and production techniques.
- Organization and management of production co-operatives.
- Production planning to create critical production mass, while spreading risks and avoiding gluts.
- Establishment of nurseries for making healthy seeds available to members at reasonable cost.

- Provision of technical advice to growers on cultivation practices and harvesting.

Marketing

- Advise on creation of market bargaining power through group marketing.
- Training on importance of quality, size, appearance, packaging, and grading in marketing.
- Develop strategic marketing skills, record keeping, accounting and simple financial analyses and business plans.
- Creation of farming community and traders as shareholders of the cooperatives.
- Develop relationship with local and regional retailers for the regular supply of produce.
- Teach and encourage members to grow a range of produce to meet the retail outlets' needs.
- Train, develop, and run economically viable warehouse/wholesale depots in the country.
- Provision of timely imports, supplies, and spare parts to maintain equipment.
- Development of viable value-added activities (i.e., primary processing).

The government recently appointed a consultant to collect data and undertake an analysis of the prospects for marketing and the possible need for interventions by the government to support horticulture development. The authors of this report had a two-day extensive meeting with the consultant for the study. He shared his planned itinerary for field visits and questionnaires that he was developing for data collection. It is our perception that given the specific duties of the consultant and the multifaceted nature of horticultural production and marketing, a multidisciplinary team may be required to adequately produce the required output. In this respect, it may be useful for USAID through PSD to consider the possibility of providing additional technical assistance to complement the consultant. Expertise in technical horticultural production, production economics, and marketing would be helpful.

As discussed in the production constraint analysis section, there is lack of appropriate farm management practices that are suitable for efficient small scale production of fruits and vegetables in the NRCAs. Applied research will be needed to generate the appropriate farm management manuals and educational materials for the extension services.

Credit/Financing Intervention

Limited and reasonably priced credit for small scale farmers and emerging black entrepreneurs is very central to the concept of black empowerment in Namibia. The fungibility nature of credit makes it a necessary condition for addressing most of the constraints identified in the pre-production, production, and marketing stages of the model. Timely and adequate credit is necessary for relaxing some of the constraints in the pre-production stage, and for capital to venture into economically feasible activities in production and marketing to ensure economic empowerment. A focused credit program, therefore, needs to be developed to provide low risk finance to small scale farmers and emerging black entrepreneurs directly through farmer and business associations, groups, or cooperatives.

Off-shore mobilization of formal credit will be needed to support production and marketing of fruits and vegetables in the NCAs. Formal credit should be used for leverage to expand and mobilize non-formal rural financial institutions. Mobilization of rural financial markets, mainly through saving and deposits, will complement the initial formal credit base to develop a sustainable local financial base. Lessons learned from other projects dealing with financial intervention in agribusiness development in Africa should be used to research and design appropriate credit interventions to support the black empowerment in the NCAs.

It is essential that a major donors forum be organized to explore the possibility of creating a foundation/endowment funds (through various innovative means) to support the farmer driven cooperatives. USAID through PSD, and USAID/Windhoek could provide a leadership role via: (a) participation at such a donor forum/meeting, (b) support of the research and design of appropriate endowment models with

credit schemes, and/or (c) through SAEDF initiation of an endowment capital fund for the development of effective farmer and business cooperatives in NCAs. The newly created Agricultural Bank or NDC may be an existing institution through which the credit schemes could be implemented.

CONCLUSION

If the GRN and its partners are interested in exploring these interventions through domestic capacity building, it will be necessary to conduct a feasibility study to design a project/program for developing effective cooperatives. Namibia is one of the few African countries where “Cooperatives” have not been misused. The government is also very keen in providing legislative policies that support the cooperative movement. An investment in the development of well run local farmer/business driven production and marketing cooperatives will provide a cornerstone for creating a responsive national farmers union, through vibrant local and regional cooperatives. There is, therefore, a great opportunity for grassroot led and managed cooperatives to succeed in Namibia as it did in America and other European countries. USAID, through the Southern Africa Regional Office, may consider developing an activity to use Namibia as a model to show how grassroot driven cooperatives could stimulate indigenous agribusiness development in the Southern African Region, through partnership initiatives.

To ensure that there will be adequate local technical capacity to support the development process, it may be useful for USAID/Windhoek to support institutional development activity at the university level. This may include: (a) a provision of technical assistance to University of Namibia to develop appropriate curricula in the newly created Faculty of Agriculture, (b) assistance to the faculty to develop effective linkages with the three Colleges of Agriculture to enhance research and extension capacity that are appropriate for the communal areas, and (c) a revision of curricula at the three Agricultural Colleges in Namibia to facilitate appropriate technical capacity development via in-service training of staff of the colleges and extension workers.

Appendix A

Areas Visited

July 24, 1995:

Meeting in Windhoek with Africare/Namibia country representative and host collaborator, Forrest Branch, and Africare Consultant, Rod Davis, to review documentation and plan field itinerary.

July 25, 1995:

Meetings with resource sources including:

- Permanent Secretary, Ministry of Agriculture, Water and Rural Development (MAWRD) [Isaac Kalinga]
- Director, National Development Corporation (NDC) [Anna Shiweda], and Chief Agricultural Consultant [I.P. Mate]
- Deputy Director of Cooperatives/Registrar of Cooperatives (MAWRD) [Christof Brock]
- USAID/Windhoek [Joan Johnson, Deputy Mission Director; Barbara Gulling, PDO; Alex Memoro, Sr. Program Assistant]

The meetings with the MAWRD and NDC personnel provided vital information, leads on contacts, and various relevant documents including, among others, the National Agricultural Policy and the Commercialization of Agricultural Services in the Communal Areas. Our meeting with the USAID Mission was to brief the staff on our activity and to secure their concurrence and collaboration. Valuable information was provided by those with whom we met.

July 26, 1995:

Meeting with National Agricultural Union's Executive Manager, Gert Grobler. The Union represents the commercial farmers of Namibia; and the meeting provided insights as to how the commercial agricultural sector might assist the development of Communal areas. The team of Acquah (UMES), Whyte (USAID), Davis and Yambila Moore (Africare/Namibia) departed for the North-

ern regions where they were to visit sites and conduct interviews in Omusati Region, Oshana Region, Oshikoto Region, Okavango Region, and Caprivi Region. The team arrived in Oshakati (town) at 10 pm.

July 27, 1995:

Visited NDC's Rural Development Center in Oshakati [Michael Karinouka, Acting Head]; NDC's Etunda Irrigation Settlement Project [Loffie von Landsberry, Project Manager], which is designed to select, train and settle approximately 50 indigenous Namibians, each on 3 hectares of land; Mahanene Research Station [Wolfgang Lechner, Chief Agricultural Researcher], which has recently developed the high yielding okashani variety of mahungu (millet) - the major source of food for the communal population; and Ogongo Agricultural College which trains extension workers. Met with the Deputy Director of MAWRD's Extension and Engineering Services (Oshikoto Region) informally in the evening and was able to arrange to meet with his Council the following day. These visits provided the team with insights as to opportunities for indigenous business development, and information to be used for constraints analysis.

July 28, 1995:

Meeting with the Oshikoto Extension and Engineering Services Council (S. Tshipongo Negombo, Deputy Director) and Council of ten members, which provide insights on opportunities such as: by-products from the milling of mahungu, assembly facilities for animal draft (carts, ploughs, cultivators, hand-pushed weeders), blacksmith for making spare parts and locally produced tools, hay making, and processing of such products as carrots, onions and sweet potatoes. Meeting with GTZ (German) representative, Thomas Kroll, who confirmed some of the opportunities above (animal drawn implements, implements to reduce work of women, tinsmith (welding), and milling. Meeting with a group (six)

of communal farmers from whom we learned that the older farmers are fairly set in their ways and do not have the flexibility (including knowledge) to change and venture into new opportunities. However, they too saw opportunities in vegetable gardening as cash crop, milling and implements (tool making), but regarded lack of knowledge and finance as the largest constraints. Meeting with the Omahangu Farmers Union (OMAFU) representative, Mr. A. L. Nghifukua, to get insights as to whether or not cooperatives or associations would be vehicles for capacity development. Later, at night, met with Gabes D. Shihepo, Chairman, and the Secretary of the OMAFU for further insights.

July 29, 1995:

Meeting with an indigenous business entrepreneur, Prinse Shiimi, who, from the perspective of a fairly success individual, gave insights into opportunities from a somewhat different view point or perspective - manufacturing (roofing, bricks, paints). This individual was identified by a PSD's other activity (Mike Unger/Roth report) as potential small/medium size business for support under the DFA. He also suggested milling, tannery, processing of mahungu, and herb and spices as areas of new opportunities.

The team then traveled by road for 8 hours from Oshikoto (via Tsumeb, Grootfontein and Rundu) to Musese (90k west of Rundu - on the Okavango river bordering Angola), where it met that night with Johan Silver, Manager of an NDC parastatal farming (cotton and mahungu) and processing (mahungu) operation. This is also a center for mahungu processing and management training for small business milling operation. The Musese area has tremendous potential for various kinds of horticultural production and processing and for the milling and processing of mahungu.

July 30, 1995

Visited the mahungu processing facility/operation at Musese; and then travelled by road for 8 hours (via Rundu, Nyangana, Bagani and Kongola) to Kamita Mulilo in Caprivi.

July 31, 1995

Meeting with Caprivi's Deputy Director of Extension and Engineering Services (MAWRD), Charles Sibolile, and Agricultural Extension Specialist, Trevor Up-Richard to discuss and identify opportunities in Caprivi. Millet, Sorghum, Maize were grain crops with potential, while in horticultural, vegetables were believed to have good potential. A high value crop could be castor oil. We then visited with the Likwana Farmers Union Cooperative, which is being supported by the French Development Center for Research Information - Action in Africa (CRIAA), representative Michel Mallet. The Union also runs a mahungu milling operation and wants to decentralize to the district level and institute a training program for individual entrepreneurs on how to manage and operate on an individual basis. Restraints identified included: technology, capital, coordination, and infrastructure.

August 1, 1995:

The team departed at 4 am for the 12 hour drive back to Windhoek (via Rundu, Grootfontein, Otavi, and Otjiwarongo) and arrived at 5 pm.

August 2, 1995:

Meetings with Namibia National Farmers Union (NNFU) [Dixon Lusepani, President]; NDC and MAWRD's Division of Cooperative Development, jointly [Anna Schiweda and Christof Brock, respectively]; USAID for debriefing [Joan Johnson and Alex Memoro]. Reviewing and discussing materials and writing up findings.

August 3-10

Team held series of meetings with USAID, University of Namibia, Namibia Agronomic Board, Ministry of Agriculture (Permanent Secretary and Planning Division), NDC, Hopley Stores, etc. The period was also used to collect and review literature from numerous sources.

Appendix B

Persons Contacted

Name	Position	Location
Mr. I. Kaulinge	Permanent Secretary	MAWRD Windhoek
Mr. C. Brock	Dep. Director, Cooperatives	MAWRD Windhoek
Mr. W. Lechner	Chief Agricultural Research Officer	MAWRD Mahanene, Omusati Region
Ms. H. Nekongo	Vice Principal, Ogongo Agricultural College	MAWRD Ogongo
Mr. T. Negumbo	Dep. Director, Extension & Engineering Services	MAWRD Ongwediva
Mr. M. Abiek	Adviser	MAWRD Ongwediva
Mr. D. Hemmstteter	Adviser	MAWRD Ongwediva
Mr. V. Imalwa	Chief Agricultural Extension Officer	MAWRD Ongwediva
Mr. F. Hango	Admin. Officer	MAWRD Ongwediva
Mr. A. Lasen	Adviser	MAWRD Ongwediva
Mr. A. Aipanda	Senior Extension Technician	MAWRD Ongwediva
Ms. E. Shuuya	Counterpart	MAWRD Ongwediva
Mr. J. Matanyaire	Rural Development Support Programme	MAWRD Ongwediva
Mr. M. Embundile	Regional Extension Technician	MAWRD Ongwediva
Ms. P. Petros	Animal Husbandry Specialist	MAWRD Ongwediva
Mr. M. Fowler	Adviser, Directorate of Planning	MAWRD Windhoek
Mr. A. Low	Adviser, Directorate of Planning	MAWRD Windhoek
Mr. M. Kalanduka	Project Manager	Rural Development Centre, Ongwediva
Mr. J. Enjala	Dept. Manager, Appropriate Technology Engineering	Rural Development Centre, Ongwediva
Mr. A. Ngulu	Dept. Manager, Fisheries	Rural Development Centre, Ongwediva
Ms. H. Kapenda	Training Officer	Rural Development Centre, Ongwediva
Ms. F. Msati	Home Economist	Rural Development Centre, Ongwediva
Mr. P. Nekondo	Technical Assistant, Fisheries	Rural Development Centre, Ongwediva
Mr. W. Abed	Headman and Farmer	Okaku - Elyambale, Oshakati
Mr. J. Kalombo	NCA Farmer	Oshakati
Mr. S. Shindove	NCA Farmer	Oshakati

Name	Position	Location
Mr. E. Haikali	NCA Farmer	Oshakati
Dr. G. Odiawo	Principal State Veterinarian	Oshakati
Mr. J. Erastus	NCA Farmer	Oshakati
Mr. M. Hisheka	Directorate of Planning, Agricultural Marketing	Windhoek
Dr. K. Kotze	General Manager	Namibian Agronomic Board
Mr. D. Lusepani	President	Namibia National Farmers Union
Mr. G. Grobbelaar	General Manager	Namibia Agricultural Union
Mr. T. Kroll	Consultant	SARDEP, Ongwediva
Mr. G. Shihepo	Chairman	OMAFa Omahangu Farmer's Assoc.
Mr. I. Kayofa	Treasurer	OMAFa Omahangu Farmer's Assoc.
Mr. P. Shiimi	Regional Councillor, Businessman	Ondangwa
Mr. A. Nghifikua	Member	OMAFa
Ms. A. Shiweda	Agricultural Manager	Namibia Development Corporation, Windhoek
Mr. J. Silver	Project Manager	NDC Musese Ag. Project
Mr. L. Landsberg	Manager	Etunda Irrigation Project, NDC
Mr. P. Klein	Agricultural Consultant	NDC, Windhoek
Mr. S. Dumeni	Regional Representative	NDC, Oshakati
Ms. B. Belding	General Development Officer	USAID, Windhoek
Mr. A. Meroro	Senior Programme Assistant	USAID, Windhoek
Ms. J. Johnson	Programme Officer	USAID, Windhoek
Mr. I. Mate	Chief Agricultural Consultant	NDC, Windhoek
Mr. K. Sibolile	Chief Agricultural Extension Officer	MAWRD, Katima Mulilo
Mr. T. Uprichard	Adviser	RDSP, Katima Mulilo
Ms. M. Kambinda	Snr Agric. Extension Technician	MAWRD, Katima Mulilo
Pastor M. Semi	Managing Director	Likwama Farmer's Union, Katima Mulilo
Mr. M. Berry	Business Manager/Secretary	Likwama Farmer's Union, Katima Mulilo
Mr. M. Mallet	Representative	CRIAA, Katima Mulilo
Mr. C. Hengari-Kandjou	Director	Omuhuka Holding, Windhoek
Mr. J.C. Hopley	Managing Director	Hopley Fresh Produce Dist, Windhoek

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